

<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371</b>		ATTORNEY'S DOCKET NUMBER CYRL 19.809 (100573-00056)
INTERNATIONAL APPLICATION NO. PCT/US03/19410	INTERNATIONAL FILING DATE 20 June 2003 (20.06.03)	U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 10/519,305
TITLE OF INVENTION SYSTEM AND METHOD FOR NONINVASIVE DIAGNOSTIC IMAGING, DETECTION, AND IDENTIFICATION OF SUBSTANCES...		
APPLICANT(S) FOR DO/EO/US CYRULNIK, Reuven Avrohom		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
<p>1. <input type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a submission under 35 U.S.C. 371.</p> <p>2. <input checked="" type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a submission under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input type="checkbox"/> The US has been elected (Article 31).</p> <p>5. <input type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))           <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ul> </p> <p>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2))           <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ul> </p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))           <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ul> </p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p>		
<p><b>Items 11 to 20 below concern document(s) or information included:</b></p> <p>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input type="checkbox"/> A preliminary amendment.</p> <p>14. <input type="checkbox"/> An Application Data Sheet under 37 CFR 1.76.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A power of attorney and/or change of address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 CFR 1.821- 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published International Application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input type="checkbox"/> Other items or information:</p>		

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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U.S. APPLICATION NO. (if known, see 37 CFR 1.5) 10/519,305		INTERNATIONAL APPLICATION NO. PCT/US03/19410		ATTORNEY'S DOCKET NUMBER CYRL 19.809 (100573-00056)	
21. The following fees are submitted:				Applicant use	Office use only
<input type="checkbox"/> a) Basic national fee..... \$300.00 <input type="checkbox"/> b) Examination fee..... \$200.00 <input type="checkbox"/> c) Search fee..... \$500.00				\$	\$
<b>TOTAL OF ABOVE CALCULATIONS =</b> \$1000.00				\$	\$
<input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof.					
Total Sheets	Extra sheets	Number of each additional 50 or fraction thereof (round up to a whole number)		RATE	
- 100 =	/50 =			x \$250.00	\$
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	\$
CLAIMS		NUMBER FILED	NUMBER EXTRA	RATE	
Total claims		- 20 =		x \$50.00	\$
Independent claims		- 3 =		x \$200.00	\$
MULTIPLE DEPENDENT CLAIM(S) (if applicable)				+ \$360.00	\$
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$	\$
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by ½.				\$	\$
<b>SUBTOTAL =</b>				\$	\$
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	\$
<b>TOTAL NATIONAL FEE =</b>				\$	\$
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	\$
<b>TOTAL FEES ENCLOSED =</b>				\$	\$
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a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>50-1290</u> . A duplicate copy of this sheet is enclosed. d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. <b>Credit card information should not be included on this form.</b> Provide credit card information and authorization on PTO-2038.					
NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.					
SEND ALL CORRESPONDENCE TO:					
CUSTOMER NUMBER 026304 KATTEN MUCHIN ZAVIS ROSENMAN 575 Madison Avenue New York, New York 10022-2585 (212) 940-8800 (212) 940-8986					
 SIGNATURE Thomas J. Bean					
NAME 44,528					
REGISTRATION NUMBER					

Filed Via Express Mail  
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On 10 February 2005  
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Attorney Docket No.: CYRL 19809 (100573-00055)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor : **CYRULNIK, Reuven Avrohom**  
Serial No. : **10/519,305**  
Filed : **21 December 2004 (21.12.04)**  
Priority Date : **21 June 2002 (21.06.02)**  
Title : **System and Method for Noninvasive Diagnostic Imaging,  
Detection, and Identification of Substances by Microwave/RF  
Modulation of X-Rays and Applications in Treatment of Diseases  
Characterized by the Presence of Pathological Macromolecules  
or by the Need for Regeneration of Normal Tissue**

10 February 2005

Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

SIR:

In order to comply with discretionary rules 37 CFR §§1.97 and 1.98, attached hereto is Form PTO-1449. The documents listed thereon contain information, which the Examiner may consider to be important in deciding whether to issue a patent in the instant application.

As this Statement is being filed prior to issuance of a first Office Action, no fee is due.

The present Disclosure Statement is being submitted in compliance with 37 CFR §1.56 as an Examiner might consider any cited document important in deciding whether to allow the application to issue as a patent, but the citation of each document is not to be construed as an admission that such document is necessarily relevant or prior art. No representation is intended that the cited documents represent the results of a complete search, and it is anticipated that the Examiner in the normal course of examination, will make an independent search and will determine the best prior art consistent with 37 CFR §1.104 (a),

and in the course of such search will review for relevance every document cited on the attached form even if not initialed.

Early and favorable consideration is respectfully solicited.

Any fee due with this paper, not fully covered by an enclosed check, may be charged on Deposit Account 50-1290.

Respectfully submitted,



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Thomas J. Bean  
Reg. No. 44,528

**CUSTOMER NUMBER 026304**

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## Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

1449/PTO

U.S. Department of Commerce  
Patent and Trademark Office

Application No.	: 10/519,305
Filing Date	: 21 December 2004 (21.12.04)
First Named Inventor	: CYRULNIK, Reuven Avrohom
Group Art Unit	:
Examiner Name	:
Attorney Docket No. : CYRL 19809 (100573-00055)	

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

Sheet 1 of 2

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No. <sup>1</sup>	U.S. Patent Document	Kind Code if known <sup>2</sup>	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns Lines Where Relevant Passages or Relevant Figures Appear

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No. <sup>1</sup>	Foreign Patent Document Office <sup>3</sup> Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)	Country	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns Lines Where Relevant Passages or Relevant Figures Appear

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), data, page(s), volume-issue number(s), publisher, country, where published, source.	Applicant check here if English language translation attached <sup>7</sup>
		Datta, JI. American Medical Association 271:800('94). [Microwaves with x-rays to treat malignant brain tumors.]	
		Beardsley, T.A. A War Not Won. Scientific American Jan. '94:130 [Lack of significant improvement in overall cancer demise rate]	
		Webb, S. & Booth A. Absorption of Microwaves by Microorganisms. Nature 222:1199-1200 ('69) [Frequency selective-DNA]	
		Webb, S.J. Effects of Microwaves on Normal and Tumor Cells as Seen by Laser-Raman Spectroscopy. J. Microwave Power 11:138 '76	
		Grundler, W. and Keilman, F. Physical Review Letters. 51:1214 '83 [Strong frequency dependence on yeast prove nonthermal resonant microwave sensitivity in biology.]	
		Gandhi, o. Ed. Biological Effects and Medical Applications of Electromagnetic Energy. PP. 380-2. '90. Frequency Specific Effects.	
		Mickey, G.H. Electromagnetism and its Effect on the Organism. NY State J. Medecine 63:1935-42 ('63). [Frequency specific killing of viruses without affecting the host; chromosomal mutation]	
		West, B. and Regelson, W. Pulsed Radio Wave Effects on Tumor Growth, J. Microwave Power 11:176-7 ('76)	
		Baranski, S. and Czersk, Biological Effects of Microwaves. 70-71, 132-4 '76. Chromosomal Effects. Possible Genetic Effects and Influence of Microwave Radiation on Mitosis. Cellular Effects.	
		Klainer, S. and Frazer, J. Raman Spectroscopy of Molecular Species During Exposure to 100 MHz Radio-Frequency Fields. Ann NY ACAD Sci. 323-6 ('74) [Frequency effects on T-RNA]	
		Frohlich, H. The Biological Effects of Microwaves. Adv. Electron and Electron Physics 53:127-50 ('80) [ Frequency specific effects on bacteria, yeast, viruses, protein metabolism, bone marrow, and Raman spectral absorption.]	
		Revzin, A. and Neumann, E. Conformation Changes in R-RNA Induced by [1 MHz] Electric Impulses. Biophys. Chem. 2:144-50 ('74).	
		Averbeck, D. Et al. Microwave [inter] Action in Cells With X-ray. J. Microwave Power 11:143 ('76).	
		Varma, M. and Raboulay. DNA Studies in Measuring Mutagenicity Caused by Non-Ionizing Radiation. Mutation Res. 31:386-92 ('75)	
		Greenebaum, V. et al. Long-Term Effects of Weak 45-75 HZ EM Fields on the Slime Mold. Technical Report, U. wisconsin ('75)	
		Mittler, S. Non-Thermal Radiowaves and Genetic Damage in Drosophila, Proc. IEEE, 6 <sup>th</sup> Annual Meeting, Miami Beach.	
		Luczak, M. ET AL. Effect of Microwaves on Virus Multiplication in Mammalian Cells J. Microwave Power 11:173-4 ('76)	
		Webb, S. and Dodds, D. Inhibition of Bacterial Cell Growth by 136 GC Microwaves, Nature 218:374-5 ('68)	

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Patent and Trademark Office U.S. DEPARTMENT OF COMMERCE

1449/PTO	U.S. Department of Commerce Patent and Trademark Office	Application No. : 10/519,305 Filing Date : 21 December 2004 (21.12.04) First Named Inventor: CYRULNIK, Reuven Avrom Group Art Unit : Examiner Name : Attorney Docket No. : CYRL 19809 (100573-00055)
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <u>Sheet 2 of 2</u>		

	Glaser, Z.R. Biomedical Aspects of Radio Frequency and Microwave Radiation. Science Policy Research Division, Lib. Congress	
	Sevastyanova, L. and Potapov. Resonance Effect in Biological Action of Microwave Radiation. IEEF Symposium, ('76)	
	Schliepake, Erwin, The Medical Use of Electrical high Frequencies. English Translation of 2 <sup>nd</sup> German Edition by R. King Brown, Actinic Press, London: '35	
	Karzmark, C.J. Advances in Linear Accelerator Design for Radiotherapy, Medical Physics 11:2, 105-128, '84.	
	Nonthermal Effects of Microwave Radiation on Mammalian Cells: Experimental and Theoretical Results. Stephen F. Cleary, Ph.D., Bioelectromagnetic Laboratory, Department of Physiology and Biophysics, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia 23298.	

Examiner Signature		Date Considered	
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Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw a line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that Issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.1<sup>6</sup> if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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